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BOSTON, MA 02109			2159	
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			08/21/2009	ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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<b>Office Action Summary</b>	<b>Application No.</b> 10/803,831	<b>Applicant(s)</b> FRANK, JOHN R.	
	<b>Examiner</b> HUNG Q. PHAM	<b>Art Unit</b> 2159	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 24 June 2009.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-17 and 20-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13, 17 and 20-22 is/are rejected.
- 7) ☒ Claim(s) 14-16 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

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## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 06/24/2009 has been entered.

### ***Response to Arguments***

- Applicant's arguments with respect to claim 1 have been fully considered but they are not persuasive.

As argued by applicant (Remarks, Page 7):

*The Examiner relies on Wacholder to show that the use of the Navigator to which Smith refers in his article involves geo-textual correlations that are derived for the corpus of documents rather than for any individual document within the corpus. To make the distinction between the claimed invention and Smith/Wacholder more clear, we have amended claim 1 to recite:*

*... selecting a toponym from the plurality of toponyms and for that selected toponym, selecting a reading of that toponym, and for that selected toponym-reading pair computing a value for a confidence that the selected toponym means that selected reading, wherein computing said value involves a summation over all documents in the corpus in which geo-textual correlations were identified that involved that toponym-reading pair.*

*This introduces the concept of a summation over certain documents within the corpus, something which is found in neither Smith nor Wacholder.*

The examiner respectfully disagrees.

As disclosed by Smith, documents in the digital library are scanned for possible proper names and assign the names to PERSON, PLACE or DATE category using simple heuristic

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methods in Nominator (Smith, Page 6<sup>1</sup>, Lines 13-16). The system then attempts to match the names classed as geographic, as well as the uncertain names, against a gazetteer (Smith, Page 6, Lines 33-34). Possible place names are disambiguated based on local context, document context and general world knowledge. The simplest instances of local context are the explicit disambiguating tags that authors put after place names, e.g., "Lancaster, PA", "Vienna, Austria". More generally, a place will more likely than not be near to other places mentioned around it. If "Philadelphia" and "Harrisburg" occur in the same paragraph, a reference to "Lancaster" is more likely to be the town in Pennsylvania than to the one in England or Arizona (Smith, Page 6-Line 39→Page 7-Line 1). Each possible location for a toponym is given a score based on its proximity to other toponyms around it (Smith, Page 7, Lines 20-21).

The Smith's teaching as discussed above reads on the claimed limitation *selecting a toponym from the plurality of toponyms and for that selected toponym, selecting a reading of that toponym*, e.g., "'Lancaster'" is selected from "Lancaster", "Philadelphia" and "Harrisburg", and for the selected "Lancaster", "Pennsylvania" as a reading of "Lancaster" is selected according to the occurrence of "Philadelphia" and "Harrisburg" in the same paragraph, and *for that selected toponym-reading pair computing a value for a confidence that the selected toponym means that selected reading*, e.g., for <"Lancaster", "Pennsylvania">, a score is given to <"Lancaster", "Pennsylvania">, the higher score of <"Lancaster", "Pennsylvania">, the more likely "Lancaster" is a town in "Pennsylvania".

As taught by Wacholder, the Nominator links together variants that refer to the same entity (Wacholder, Page 205, Left Column, Lines 52-53). After the whole document collection has been processed, linked groups are merged across documents and their variants combined, e.g., if in one document "president Clinton was a variant of William Clinton, while in another document Governor Clinton was a variant of William Clinton, both are treated as variants of an

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<sup>1</sup> Page 1 is the first page of the reference.

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aggregated William Clinton group. In this minimal sense, Nominator uses the larger context of the document collection to learn more variants for a given name (Wacholder, Page 205, Right Column, Lines 15-24).

The Wacholder's teaching reads on the claimed limitation *computing said value involves a summation over all document in the corpus in which geo-textual correlations were identified that involved that toponym-reading pair*, e.g., by using Nominator, the computed score involves an aggregation of documents in which "Philadelphia", "Harrisburg" and "Lancaster" were identified that involved <"Lancaster", "Pennsylvania">.

- Applicant's arguments with respect to amended claim 10 have been fully considered but they are not persuasive.

As argued by the applicant (Remarks, Page 8):

*With that change, we believe that our earlier arguments as to why Smith does not teach or suggest the invention of claim 10 still apply. More specifically, Smith does not disclose "boosting the value of the confidence for the selected (toponym, place) pair for the target document" "if a toponym is identified within the target document that has an associated place that is geographically related to the place referred to by the selected (toponym, place) pair," as recited in claim 10.*

The examiner respectfully disagrees.

As disclosed by Smith, documents in the digital library are scanned for possible proper names and assign the names to PERSON, PLACE or DATE category using simple heuristic methods in Nominator (Smith, Page 6<sup>2</sup>, Lines 13-16). The system then attempts to match the names classed as geographic, as well as the uncertain names, against a gazetteer (Smith, Page 6 Lines 33-34). Possible place names are disambiguated based on local context, document context and general world knowledge. In general, if there are explicit disambiguating

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<sup>2</sup> Page 1 is the first page of the reference.

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tags that authors put after place names, e.g., "Lancaster, PA", "Vienna, Austria" and if "Philadelphia" and "Harrisburg" occur in the same paragraph, a reference to "Lancaster" is more likely to be the town in Pennsylvania than to the one in England or Arizona (Smith, Page 6 Line 39-Page 7 Line 1). As disclosed by Wacholder, during the analysis process of Nominator, proper names in documents without personal title or unknown first name such as "Ruth Lake", "Beverly Hills", "Panorama Lake" are assigned low positive scores or zero scores and assigned to PLACE category. Further disambiguation is possible during aggregation across documents by merging if the canonical forms and entity type are identical, e.g., <"Ruth Lake" (?PLACE)> is merged with <"Ruth Lake" (PLACE)> (Wacholder, Page 207, Left Column, Line 21→Right Column, Line 12). In a typical document, a single entity may be referred to by many name variants which differ in their degree of potential ambiguity. For example, "Paris" and "Washington" are highly ambiguous out of context but in well edited text they are often disambiguated by the occurrence of a single unambiguous variant in the same document. Thus, "Washington" is likely to co-occur with either "President Washington" or "Washington, D.C.", but not with both (Wacholder, Page 206, Right Column, Lines 37-51).

The teaching of Smith using the Nominator as inherited features or obvious features read on the claimed limitation *for a selected (toponym,place) pair of the plurality of (toponym,place) pairs that is found within the target document*, e.g., <"Washington", (?PLACE)> in PLACE category of a target document is selected;

*obtaining a pre-computed number for a value of a confidence that the toponym of the selected (toponym, place) pair refers to the place of the selected (toponym, place) pair, said pre-computed number derived from a statistical observation about a large corpus of documents*, e.g., <"Washington", (?PLACE)> is assigned a low positive score or zero score, the low positive score or zero score is derived from the first occurrence of the term in the collection of documents;

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*determining if another toponym is present within the target document that has an associated place that is geographically related to the place referred to by the selected (toponym, place) pair, e.g., "Washington, D.C." is determined that has "D.C." that is geographically related to the place referred to by <"Washington", (?PLACE)>;*

*if a toponym is identified within the target document that has an associated place that is geographically related to the place referred to by the selected (toponym, place) pair, boosting the value of the confidence for the selected (toponym, place) pair for the target document, e.g., <"Washington, D.C."> is identified within the document that has "D.C." that is geographically related to (?PLACE) referred to be <"Washington", (?PLACE)>, the low positive score or zero score of <"Washington", (?PLACE)> is replaced by the more positive score of <"Washington, D.C.">.*

### ***Claim Rejections - 35 USC § 101***

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

**Claims 1-17 and 20-22 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.**

A patentable process must (1) be tied to a particular apparatus or machine or (2) transform underlying subject matter (such as an article or materials) to a different state or thing. See *In re Bilski*, 545 F.3d 943, 88 USPQ2d 1385 (Fed. Cir. 2008). The method of claims 1-17 and 20-22 is non-statutory in view of *In re Bilski*, e.g., the recited method is not tied to a particular machine or apparatus, or it transforms a particular article into a different state or thing.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

**Claims 1, 3-12, 17 and 20-22 are rejected under 35 U.S.C. 102(b) as anticipated by Smith et al. [Disambiguating Geographic Names in a Historical Digital Library] and Wacholder et al. [Disambiguation of Proper Names in Text] or, in the alternative, under 35 U.S.C. 103(a) as obvious over Smith et al. [Disambiguating Geographic Names in a Historical Digital Library] in view of Wacholder et al. [Disambiguation of Proper Names in Text].**

Regarding claim 1, Smith teaches a computer-implemented method for processing a plurality of toponyms wherein each toponym of the plurality of toponyms has one or more readings, said method comprising:

*(a) for each document within a large corpus of documents, identifying geo-textual correlations among readings of the toponyms within the plurality of toponyms* (As disclosed by Smith, documents in the digital library are scanned for possible proper names and assign the names to PERSON, PLACE or DATE category using simple heuristic methods in Nominator (Smith, Page 6<sup>3</sup>, Lines 13-16). The system then attempts to match the names classed as geographic, as well as the uncertain names, against a gazetteer (Smith, Page 6 Lines 33-34). Possible place names are

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<sup>3</sup> Page 1 is the first page of the reference.



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disambiguated based on local context, document context and general world knowledge. In general, if there are explicit disambiguating tags that authors put after place names, e.g., "Lancaster, PA", "Vienna, Austria" and if "Philadelphia" and "Harrisburg" occur in the same paragraph, a reference to "Lancaster" is more likely to be the town in Pennsylvania than to the one in England or Arizona (Smith, Page 6 Line 39-Page 7 Line 1). As disclosed by Wacholder, during the analysis process of Nominator, proper names in documents without personal title or unknown first name such as "Ruth Lake", "Beverly Hills", "Panorama Lake" are assigned low positive scores or zero scores and assigned to PLACE category. Further disambiguation is possible during aggregation across documents by merging if the canonical forms and entity type are identical, e.g., "Ruth Lake" (?PLACE) is merged with "Ruth Lake" (PLACE) (Wacholder, Page 207, Left Column, Line 21-Right Column, Line 12). The teaching of Smith using the Wacholder Nominator as inherited features or obvious features indicate the claimed limitation *for each document within a large corpus of documents*, e.g., proper names in the scanned documents in the digital library are analyzed, *identifying geo-textual correlations among readings of the toponyms within the plurality of toponyms*, e.g., identifying geographic textual correlations such as "Lancaster", "Philadelphia" and "Harrisburg" among reading of "Lancaster", "Philadelphia" and "Harrisburg" within the names in PLACE category); and

*(b) selecting a toponym from the plurality of toponyms and for that selected toponym, selecting a reading of that toponym, and for that selected toponym-reading pair computing a value for a confidence that the selected toponym means that selected reading* (The Smith's teaching as discussed above reads on the claimed limitation *selecting a toponym from the plurality of toponyms and for that selected toponym, selecting a reading of that toponym*, e.g., "'Lancaster'" is selected from "Lancaster", "Philadelphia" and "Harrisburg", and for the selected "Lancaster", "Pennsylvania" as a reading of "Lancaster" is selected according to the occurrence of "Philadelphia" and "Harrisburg" in the same paragraph, and *for that selected toponym-reading pair computing a value for a confidence that the selected toponym means that selected reading*,

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e.g., for <"Lancaster", "Pennsylvania">, a score is given to <"Lancaster", "Pennsylvania">, the higher score of <"Lancaster", "Pennsylvania">, the more likely "Lancaster" is a town in "Pennsylvania"),

*wherein computing said value involves a summation over all document in the corpus in which geo-textual correlations were identified that involved that toponym-reading pair* (As taught by Wacholder, the Nominator links together variants that refer to the same entity (Wacholder, Page 205, Left Column, Lines 52-53). After the whole document collection has been processed, linked groups are merged across documents and their variants combined, e.g., if in one document "president Clinton was a variant of William Clinton, while in another document Governor Clinton was a variant of William Clinton, both are treated as variants of an aggregated William Clinton group. In this minimal sense, Nominator uses the larger context of the document collection to learn more variants for a given name (Wacholder, Page 205, Right Column, Lines 15-24). The Wacholder's teaching reads on the claimed limitation *computing said value involves a summation over all document in the corpus in which geo-textual correlations were identified that involved that toponym-reading pair*, e.g., by using Nominator, the computed score involves an aggregation of documents in which "Philadelphia", "Harrisburg" and "Lancaster" were identified that involved <"Lancaster", "Pennsylvania">).

Regarding claim 3, Smith and Wacholder, in combination, teach all of the claimed subject matter as discussed above with respect to claim 1, Smith further discloses the step of *selecting a starting value for the confidence for that selected toponym-pair, and wherein computing value for confidences involves modifying the starting value based on the identified geo-textual correlations within the corpus* (Smith, Page 7 Lines 7-30).

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Regarding claim 4, Smith and Wacholder, in combination, teach all of the claimed subject matter as discussed above with respect to claim 3, Smith further discloses the step of *using a method of uniform priors* (Smith, Page 7 Lines 7-30).

Regarding claim 5, Smith and Wacholder, in combination, teach all of the claimed subject matter as discussed above with respect to claim 1, Smith further discloses the step of *identifying within documents in the corpus toponyms that have associated geographic locations that are nearby to each other* (Smith, Page 6 Line 39-Page 7 Line 1).

Regarding claim 6, Smith and Wacholder, in combination, teach all of the claimed subject matter as discussed above with respect to claim 1, Smith further discloses the step of *identifying spatial correlation among geographic references of toponyms that are in textual proximity* (Smith, Page 6 Line 39-Page 7 Line 1).

Regarding claim 7, Smith and Wacholder, in combination, teach all of the claimed subject matter as discussed above with respect to claim 6, Smith further discloses *textual proximity means within the same document* (Smith, Page 6 Line 39-Page 7 Line 1).

Regarding claim 8, Smith and Wacholder, in combination, teach all of the claimed subject matter as discussed above with respect to claim 6, Smith further discloses *textual proximity means within the same document or any document closely linked with said same document* (Smith, Page 6 Line 39-Page 7 Line 1).

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Regarding claim 9, Smith and Wacholder, in combination, teach all of the claimed subject matter as discussed above with respect to claim 1, Smith further discloses the step of *processing the corpus by a named entity tagger prior to identifying the geo-textual correlations* (Smith, Page 6 Line 39-Page 7 Line 1).

Regarding claim 10, Smith teaches a computer-implemented method of generating information useful for ranking a document that includes a plurality of toponyms for which there is a corresponding plurality of (toponym,place) pairs, said method comprising:

*for a selected (toponym,place) pair of the plurality of (toponym,place) pairs that is found within the target document* (As disclosed by Smith, documents in the digital library are scanned for possible proper names and assign the names to PERSON, PLACE or DATE category using simple heuristic methods in Nominator (Smith, Page 6<sup>4</sup>, Lines 13-16). The system then attempts to match the names classed as geographic, as well as the uncertain names, against a gazetteer (Smith, Page 6 Lines 33-34). Possible place names are disambiguated based on local context, document context and general world knowledge. In general, if there are explicit disambiguating tags that authors put after place names, e.g., "Lancaster, PA", "Vienna, Austria" and if "Philadelphia" and "Harrisburg" occur in the same paragraph, a reference to "Lancaster" is more likely to be the town in Pennsylvania than to the one in England or Arizona (Smith, Page 6 Line 39-Page 7 Line 1). As disclosed by Wacholder, during the analysis process of Nominator, proper names in documents without personal title or unknown first name such as "Ruth Lake", "Beverly Hills", "Panorama Lake" are assigned low positive scores or zero scores and assigned to PLACE category. Further disambiguation is possible during aggregation across documents by merging if the canonical forms and entity type are identical, e.g., <"Ruth Lake" (?PLACE)> is merged with <"Ruth Lake" (PLACE)> (Wacholder, Page 207, Left Column, Line 21→Right

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Column, Line 12). In a typical document, a single entity may be referred to by many name variants which differ in their degree of potential ambiguity. For example, “Paris” and “Washington” are highly ambiguous out of context but in well edited text they are often disambiguated by the occurrence of a single unambiguous variant in the same document. Thus, “Washington” is likely to co-occur with either “President Washington” or “Washington, D.C.”, but not with both (Wacholder, Page 206, Right Column, Lines 37-51). The teaching of Smith using the Nominator as inherited features or obvious features read on the claimed limitation *for a selected (toponym,place) pair of the plurality of (toponym,place) pairs that is found within the target document*, e.g., <“Washington”, (?PLACE)> in PLACE category of a target document is selected);

*(1) obtaining a pre-computed number for a value of a confidence that the toponym of the selected (toponym, place) pair refers to the place of the selected (toponym, place) pair, said pre-computed number derived from a statistical observation about a large corpus of documents* (As discussed above, <“Washington”, (?PLACE)> is assigned a low positive score or zero score, the low positive score or zero score is derived from the first occurrence of the term in the collection of documents);

*(2) determining if another toponym is present within the target document that has an associated place that is geographically related to the place referred to by the selected (toponym, place) pair* (As discussed above, “Washington, D.C.” is determined that has “D.C.” that is geographically related to the place referred to by <“Washington”, (?PLACE)>; and

*(3) if a toponym is identified within the target document that has an associated place that is geographically related to the place referred to by the selected (toponym, place) pair, boosting the value of the confidence for the selected (toponym, place) pair for the target document* (As discussed above, <“Washington, D.C.”> is identified within the document that has “D.C.” that is geographically related to (?PLACE) referred to be <“Washington”, (?PLACE)>, the low positive score or zero

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<sup>4</sup> Page 1 is the first page of the reference.

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score of <“Washington”, (?PLACE)> is replaced by the more positive score of <“Washington, D.C.”>).

Regarding claim 11, Smith and Wacholder, in combination, teach all of the claimed subject matter as discussed above with respect to claim 10, Smith further discloses the step of *identifying another toponym that has an associated geographic region that encompasses the place referred to by the selected (toponym, place) pair* (Smith, Page 6 Line 39-Page 7 Line 1).

Regarding claim 12, Smith and Wacholder, in combination, teach all of the claimed subject matter as discussed above with respect to claim 10, Smith further discloses the step of *identifying another toponym that has an associated place that is geographically nearby the place referred to by the selected (toponym, place) pair* (Smith, Page 6 Line 39-Page 7 Line 1).

Regarding claim 17, Smith and Wacholder, in combination, teach all of the claimed subject matter as discussed above with respect to claim 11, Smith further discloses *performing steps (1) and (2) and (3) for each (toponym,place) pair among the plurality of (toponym,place) pairs that is found within the target document to generate modified values for the confidences for the plurality of (toponym,place) pairs that are found within the target document* (Smith, Page 6 Line 39-Page 7 Line 29); and

*using the modified values to rank the target document according to the target document's relevance to a search query* (Smith, FIG. 3).

Regarding claim 20, Smith and Wacholder, in combination, teach all of the claimed subject matter as discussed above with respect to claim 1, Smith further discloses *generating the*

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*value for a confidence that the selected toponym refers to a corresponding geographic location does not involve using information extrinsic to the corpus* (Smith, Page 7 Lines 7-15).

Regarding claim 21, Smith and Wacholder, in combination, teach all of the claimed subject matter as discussed above with respect to claim 1, Smith and Wacholder further discloses the step of *repeating step (b) for each reading of that selected toponym* (Smith, Page 6 Line 39-Page 7 Line 1).

Regarding claim 22, Smith and Wacholder, in combination, teach all of the claimed subject matter as discussed above with respect to claim 1, Smith and Wacholder further discloses the step of *repeating step (b) for each toponym among the plurality of toponyms* (Smith, Page 6 Line 39-Page 7 Line 1).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Smith et al. [Disambiguating Geographic Names in a Historical Digital Library] and Wacholder et al. [Disambiguation of Proper Names in Text] in view of Naughton [USP 6,240,425 B1].**

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Regarding claim 13, Smith and Wacholder, in combination, teach all of the claimed subject matter as discussed above with respect to claim 12, but not teach the step of *computing a geographical distance between the place associated with the identified toponym and the place referred to by the selected (toponym,place) pair*.

Naughton teaches the technique of computing a geographical distance between two areas (Naughton, Col. 5 Lines 8-27).

Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to use the step of computing distance as taught by Naughton in Smith method in order to disambiguating geographic names in a document.

**Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Smith et al. [Disambiguating Geographic Names in a Historical Digital Library] and Wacholder et al. [Disambiguation of Proper Names in Text] in view of Frank et al. [WO 01/63479 A1].**

Regarding claim 2, Smith and Wacholder, in combination, teach all of the claimed subject matter as discussed above with respect to claim 1, but does not teach the step of *using the value for the confidences generated for the selected toponym-reading pair to rank documents according to their relevance to a search query*.

Frank teach the step of *using the value for the confidences generated for the selected toponym-reading pair to rank documents according to their relevance to a search query* (Frank, Page 32 Line 28-Page 33 Line 19).

Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to include the step of ranking as taught by Frank into Smith method in order to search for a particular document with spatial criteria.



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***Allowable Subject Matter***

**Claims 14-16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.**

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HUNG Q. PHAM whose telephone number is 571-272-4040. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, JAMES K. TRUJILLO can be reached on 571-272-3677. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/HUNG Q. PHAM/  
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